DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 308 • KAPOLEI, HAWAII 96707
PHONE: (808) 692-5159 • FAX: (808) 692-5113 • Website: http://www.honolulu.gov

MUFI HANNEMANN
Mayor

ERIC S. TAKAMURA, Ph.D., P.E.
Director

KENNETH A. SHIMIZU
Deputy Director

November 14, 2006

The Honorable Donovan M. Dela Cruz, Chair
and Members of the City Council
City and County of Honolulu
530 South King Street, Room 202
Honolulu, Hawaii 96813

Dear Chair Dela Cruz and Councilmembers:

Subject: Resolution to Approve a Joint-Funding Agreement with the U.S. Geological Survey (USGS) to Conduct Storm Water Monitoring for Surface-Water and Suspended Sediment Data for the Waikele Watershed in Central Oahu

This Intergovernmental Agreement Resolution will authorize the City to enter into a joint-funding agreement with the U.S. Geological Survey (USGS) to conduct storm water monitoring for surface-water and suspended sediment data for the Waikele Watershed in Central Oahu.

Under this agreement, the USGS would operate a network of four (4) streamflow and suspended-sediment monitoring stations, to collect both manual and automatic samples during base-flow and high-flow conditions so that daily sediment loads can be computed for each station for a period of three (3) years. One year, prior to the start of sampling will be reserved for construction and another year following sampling will be used to generate an interpretive report. The USGS has proposed that this project be funded through the USGS Federal-State Cooperative Program, and that the USGS provide matching funds for the continued assistance, while joint matching funds be provided by the City's Department of Environmental Services, which has been budgeted for FY07 for year one (1) of the project. Expected cost for year one (1) is estimated at $52,670. The total cost of the proposed work by the USGS is expected to be $711,600, with $355,800 being the City's portion over 5.5 years. The USGS proposal and agreement dated November 7, 2005, is attached to the Resolution as Exhibit "A".

If you have any questions, please contact Randall Wakumoto of our Storm Water Quality Branch, Environmental Quality Division at 692-5207.

Sincerely,

Dr. Eric S. Takamura, P.E.
Director, Department of Environmental Services

Attachments

APPROVED:

WAYNE M. HASHIRO, P.E. DATE
Managing Director

Dept. Com. No. 0925

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. _____

RESOLUTION

AUTHORIZING A JOINT FUNDING AGREEMENT WITH THE UNITED STATES GEOLOGICAL SURVEY (USGS) TO CONDUCT STORM WATER MONITORING FOR SURFACE-WATER AND SUSPENDED SEDIMENT DATA FOR THE WAIKELE WATERSHED IN CENTRAL OAHU.

WHEREAS, Chapter 1, Article 8, Revised Ordinances of Honolulu 1990, as amended, provides that any intergovernmental agreement which places an obligation upon the City or any department or agency thereof shall require the prior consent and approval of the City Council; and

WHEREAS, the City is required, as part of its storm water management program under municipal separate storm sewer system National Pollutant Discharge Elimination System (NPDES) Permit No. HI S000002, to continue coordinating monitoring with other agencies, including the United States Geological Survey (USGS), and to monitor suspended sediments in streams, comparing the impact of forested conservation, agricultural, and military areas to the impact from urbanized areas; and

WHEREAS, as part of its monitoring activities, the City will contract with the USGS to operate a network of four (4) streamflow and suspended-sediment monitoring stations, to collect both manual and automatic samples during base flow and high-flow conditions so that daily sediment loads can be computed for each station for a period of three (3) years, with one (1) additional year reserved for construction and another year following sampling to generate an interpretive report as described in the proposal dated August 16, 2005, designated as Exhibit "A"; and by reference incorporated herein; and

WHEREAS, this project is of such interest to the USGS that it has proposed that the project be funded through the USGS Federal-State Cooperative Program, and that the USGS provide matching funds for the continued assistance, while joint matching funds be provided by the Department of Environmental Services (ENV) operating budget for Fiscal Year 2007 (FY07) for year one (1) of the project, and any future funding to be done on a year-to-year basis; now, therefore

BE IT RESOLVED by the Council of the City and County of Honolulu that the Mayor or the Mayor's designated representative is hereby authorized on behalf of the City and County of Honolulu to enter into an agreement with the USGS to conduct storm water monitoring for surface water and suspended sediment data for the Waikele watershed in Central Oahu; and

BE IT FURTHER RESOLVED that authorization is hereby given to receive and expend the federal funds for the intended purpose; and

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. _____

RESOLUTION

BE IT FINALLY RESOLVED that the Clerk be hereby directed to forward copies of this Resolution to the Mayor, the Director of the Department of Environmental Services, and the USGS:

U.S. Geological Survey
Pacific Islands Water Science Center
677 Ala Moana Blvd., Suite 415
Honolulu, Hawaii 96813

INTRODUCED BY:

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_____

_____

_____

_____

DATE OF INTRODUCTION:

_____

_____ _____

Honolulu, Hawaii Councilmembers

EQ12707

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
PACIFIC ISLANDS WATER SCIENCE CENTER
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813
Phone: (808) 587-2400/Fax: (808) 587-2401

November 7, 2005

Dr. Eric S. Takamura, Director
City and County of Honolulu
Department of Environmental Services
100 Uluohia Street, Suite 308
Kapolei, Hawaii 96707

Dear Dr. Takamura:

As discussed with Mr. Gerald Takayesu of your staff, I am providing you, enclosed, with three copies of a Joint Funding Agreement for a cooperative U.S. Geological Survey (USGS)-City and County of Honolulu Department of Environmental Services (DES) project to determine suspended-sediment loads at land-use district boundaries in the Waikele watershed in central Oahu. The purpose of the project is to determine the effects of upstream land uses on stream suspended-sediment loads. Results will be useful for evaluating source allocations developed in ongoing Total Maximum Daily Load analyses undertaken by the State Department of Health.

We propose to operate a network of four streamflow and suspended-sediment monitoring stations for a period of three years, with an additional year for construction, beginning July 1, 2006. The four stations will be located along Waikele Stream and its tributaries near land-use district boundaries (conservation, agriculture, urban, and military, see Appendix 1). Three stations will monitor sediment loads from tributaries with primarily conservation, urban, or military source areas. The fourth station will monitor sediment loads near the mouth of the stream, where sediment loads are affected by agriculture in addition to the other three land uses.

Suspended-sediment loads at the downstream station are also affected by changes in channel sediment storage. In order to more accurately quantify the sediment contributions from agricultural lands, we will establish a total of 30 monumented cross-sections along the main channels of Waikele Stream and its major tributaries between the forest reserve boundary and the downstream gaging station. These cross sections will be located in ten groups of three. Cross-section groups will be located at roughly equal intervals along the channels, but actual locations will depend on access. The cross sections within a group will be located approximately one channel width apart. The cross sections will be surveyed annually to provide a quantitative basis for estimating changes in sediment storage within the channel system in the agricultural district. In addition, we will quantify size distributions and bulk density of channel-stored sediments at channel cross-section locations to allow comparison of volumes of stored sediment to suspended-sediment loads in mass units.

Exhibit "A"

An interpretive report will be prepared during the 18 months following the completion of data collection. The report will compare suspended-sediment loads and yields for the four land-use districts, compare the measured suspended-sediment loads and yields to results of previous studies data and studies on Oahu, and develop a sediment budget for the lower channel system to allow quantification of suspended-sediment loads related to agricultural lands and of suspended-sediment loads resulting from remobilization of stored sediment.

Stream flow at the four stations will be continuously monitored with real-time telemetry. Sediment samples will be collected both manually and with automatic samples. Samples will be collected during base-flow and high-flow conditions so that daily sediment loads can be computed for each station.

We propose to begin work at the beginning of the state fiscal year (FY) 2007 on July 1, 2006. We will complete the installation of the stations and cross sections by June 30, 2007, and operate the stations and survey the cross sections from July 1, 2007 to June 30, 2010, to obtain three complete years of data. The interpretive report will be prepared following completion of monitoring. We plan to complete the report by December 31, 2011.

The costs of constructing and operating the four stream-flow and sediment monitoring stations, installing and monitoring channel cross sections, and preparing a report will total $711,600 over the period July 1, 2006, to December 31, 2011 (Appendix 2, Table 1, attached). As this project would meet one of the objectives of our science plan, I am prepared to offer USGS matching funds to cover half of the project costs. The cost for the City and County will therefore be $355,800 over 5.5 years.

The legal authority for the U.S. Geological Survey to enter into this agreement is 43 U.S.C. 50. Work performed with funds from this agreement will be conducted on a fixed-price basis. Your agency will be billed via Form DI-1040 according to the terms of the JFA. The results of all work under this agreement will be available for publication by the USGS.

If you are in agreement with this program, please sign and return two copies of the agreement by December 30, 2005. The third copy is for your files. If you have any questions, please call Barry Hill of my staff at 587-2407.

Sincerely,

Gordon Tribble
Director

Attachments/Enclosures

Appendix 1: Monitoring Stations

Waikakalaua Stream near Wahiawa

This will be a new real-time stream-flow and daily suspended-sediment station established near the Forest Reserve boundary to monitor stream-flow and sediment loads from the Conservation District. Stream flow is probably intermittent, persisting during most of the year but ceasing during extended periods without rainfall.

Mililani Storm Drain A

This storm drain carries runoff from commercial and residential areas (urban district) to Waikakalaua Gulch. A new real-time stream-flow and sediment station will be constructed at this site. Stream flow is ephemeral, occurring only during and shortly after rainfall.

Waikele Gulch at Wheeler Field

Currently, this station is operated as a crest-stage gage (stream-flow peaks only) as part of our cooperative flood monitoring program with the City and County of Honolulu Department of Planning and Permitting (DPP). The station will be upgraded to a real-time continuously recording stream-flow and sediment station. Current DPP funding for the station could probably be used to offset operational costs. The station is on military land and the upstream drainage area is almost completely under military control (Wheeler Field and Schofield Barracks). Stream flow is intermittent, persisting only for a few hours to a few days after heavy rainfall.

Waikele Stream at Waipahu

This station is operated as part of the USGS-CWRM stream-flow network, and provides real-time stream-flow data. The station would need to be upgraded for sediment monitoring. Stream flow monitoring will continue to be funded through the USGS-CWRM program, and is not included with the cost estimates for this proposal. The station is located immediately upstream of the tidally affected reach of the stream, and the upstream drainage area includes the entire Waikele watershed upstream of the Farrington Highway. Sediment loads at this station therefore include contributions from conservation, agricultural, military, and urban areas. Stream flow is perennial, and includes substantial amounts of groundwater discharged to the channel. The USGS collected daily suspended-sediment data at this station from 1972 to 1993, and collected water-quality data from 1967 to 1995 and 1998 to 2000.

Appendix 2: Cost Estimates, by State Fiscal Year

A. Stream-flow and Sediment Stations

Waikakalaua Stream near Wahiawa (new station, location to be determined)

Installation (FY 2007)

Obtain permits and construct gage	$18,120
Install sediment sampler	$ 8,400
Total installation costs	$26,520

Annual operations and maintenance (FY 2008, with 3% inflation in FY 2009 and 2010)

Stream flow	$14,000
Sediment	$22,660
Total annual operations and maintenance	$36,660

Waikele Stream at Waipahu

Installation (FY 2007)

Install sediment sampler	$ 8,400
Total installation costs	$ 8,400

Annual operations and maintenance (FY 2008, with 3% inflation in FY 2009 and 2010)

Stream flow	n/a
Sediment	$22,660
Total annual operations and maintenance	$22,660

Waikele Stream at Wheeler Field

Installation (FY 2007)

Upgrade to continuous record gage	$17,200
Install sediment sampler	$ 8,400
Total installation costs	$25,600

Annual operations and maintenance (FY 2008, with 3% inflation in FY2009 and 2010)

Stream flow	$11,340
Sediment	$22,660
Total annual operations and maintenance	$34,000

Mililani Storm Drain A

Installation (FY 2007)

Obtain permits and construct gage	$18,120
Install sediment sampler	$ 8,400
Total installation costs	$26,520

Annual operations and maintenance (FY 2008, with 3% inflation in FY 2009 and 2010)

Stream flow	$14,000
Sediment	$22,660
Total annual operations and maintenance	$36,660

B. Channel Cross-sections

Installation (FY 2007)	$14,000
Sediment sample analyses (FY 2007)	$ 4,300
	$18,300
Annual Surveys (FY 2008, with 3% inflation in FY 2009 and 2010)	$14,400

C. Report Preparation

FY 2011	$100,000
FY 2012	$ 60,000
Report Total	$160,000

Table 1: Funding Summary

State Fiscal Year	USGS Funds	DES Funds	Total Funds
2007	$52,670	$52,670	$105,340
2008	$72,190	$72,190	$144,380
2009	$74,340	$74,340	$148,680
2010	$76,600	$76,600	$153,200
2011	$50,000	$50,000	$100,000
2012 (partial year)	$30,000	$30,000	$ 60,000
Total	$355,800	$355,800	$711,600

Form 9-1366
(May 1996)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
WATER RESOURCES INVESTIGATIONS

CUSTOMER NO. HI030

THIS AGREEMENT is entered into as of the **4th** day of **November** 20**05** by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the **Department of Environmental Services, City and County of Honolulu,** party of the second part.

1. The parties hereto agree that subject to the availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation **for suspended sediment loads at land-use district boundaries in the Waikele watershed in central Oahu, Hawaii,** hereinafter called the program.

2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program.

   (a) **$355,800.00** by the party of the first part during the period **July 1, 2006** to **December 31, 2011**

   (b) **$355,800.00** by the party of the second part during the period **July 1, 2006** to **December 31, 2011**

   This is a fixed-price agreement.

   (c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.

4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.

5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.

6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

8. The maps, records or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at cost, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records or reports published by either party shall contain a statement of the cooperative relations between the parties.

9. Billing for this agreement will be rendered **quarterly**. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983.).

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF ENVIRONMENTAL SERVICES

U.S. GEOLOGICAL SURVEY
UNITED STATES
DEPARTMENT OF THE INTERIOR

By _____

By _____

By _____ (SIGNATURE & TITLE)

Gordon Tribble, Director

By _____

(USE REVERSE SIDE IF ADDITIONAL SIGNATURES ARE REQUIRED)

Exhibit "A"

Form 9-1366
(May 1996)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
WATER RESOURCES INVESTIGATIONS

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U.S. GEOLOGICAL SURVEY
UNITED STATES
DEPARTMENT OF THE INTERIOR

By _____
(SIGNATURE & TITLE)
Gordon Tribble, Director

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF ENVIRONMENTAL SERVICES

By _____

By _____

By _____

(USE REVERSE SIDE IF ADDITIONAL SIGNATURES ARE REQUIRED)

Exhibit "A"